

REMARKS

Claims 1-3, 5, 8-14, 16-24, 27 and 28 are pending in this application. Claims 1, 8-10, 13, 14, 16, 18, 19 and 22 have been amended. Claims 4, 6, 7, 15, 25 and 26 have been canceled. Claim 28 is new. Support for the amendments can be found in the specification on page 7, lines 11 through 17. No new matter has been introduced.

The Examiner rejected claims 10, 17 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Sun (US 5,455,629) in view of Fukushima (US 6,477,204). Applicant respectfully traverses the Examiner's rejections.

Initially, and as Applicant previously noted, Sun is not in the same field as the claimed invention. Sun is directed to a decoding unit for a single MPEG sequence. In Sun, this single sequence is split into two parts for transmission – a high-priority part and a low-priority part. See Sun at column 1, lines 30-43; column 5, lines 52-55. This is done to reduce transmission errors. Sun then describes how to recover the single sequence when decoding and how to regenerate a coherent single sequence when low-priority elements are lost during transmission. In Sun, high and low priority refer to the importance of the data to reconstructing a single sequence. In other words, in Sun the prioritization depends on the content of the image sequence, not on the format of the image sequence. Further, the decoder of Sun does not prioritize high and low priority data – the prioritizing is done by the transmitter of Sun, not the decoder. In contrast, the present invention is directed to a system and method for decoding a plurality of MPEG sequences simultaneously to produce a plurality of MPEG images simultaneously. The Examiner argued that Sun is directed to decoding sequential image data. But there is no indication the sequential image data decoded by Sun is "from more than one MPEG stream," as recited. Thus, Sun is not an appropriate primary reference.

Turning to the language of the claims, claim 10 recites: "receiving a first sequence of frame-interlaced coded images and a second sequence of non-frame-interlaced coded images; receiving a stream of decoding commands, each decoding command corresponding to a respective one of the coded images; prioritizing the received coded images based on whether the coded image is a frame-interlaced coded image and on when the corresponding decoding command was received; decoding the coded images using the single MPEG decoder based on the

prioritizing.” As noted above, Sun does not simultaneously decode a plurality of MPEG sequences from more than one MPEG stream, nor does Sun disclose prioritizing based on whether an image is a frame-interlaced coded image, as recited.

The Examiner points to the error token generator 65 of Figure 8 of Sun as receiving coded images. As Applicant previously argued, the error token generator 65 provides substitute data for missing low priority blocks of a single image sequence. Even assuming error token generator 65 receives an image sequence, there is no mention in the description of Figure 8 of the error token generator 65 of Figure 8 “receiving a first sequence of frame-interlaced coded images and a second sequence of non-frame-interlaced coded images,” as recited. The Examiner does not address this argument, but continues to rely on error token generator 65.

Sun also does not prioritize the received coded images. The Examiner contends that elements 60, 61 and 65 “receive the priority data of the coded image data.” As previously noted, even if true this is not the same thing as “prioritizing the received coded images”, as recited.

Sun also does not decode “decoding the coded images using the single MPEG decoder based on the prioritizing, thereby producing decoded images of first and second images sequences” as recited. The Examiner contends the variable length decoder 64 of Figure 8 provides this function. Even if Sun is (incorrectly) viewed as receiving and decoding two image sequences simultaneously, variable length decoder 64 produces a single image from these blocks. See Sun, col. 8, lines 27-29 (“The recombined HP and LP video signals provided by the VLD 64 ...”). Therefore Sun does not produce “decoded images of first and second image sequences” as recited. Accordingly, Sun is not an appropriate primary reference.

Further, Fukushima in fact teaches away from the claimed invention. Instead of using “a single MPEG decoder,” and a prioritization scheme to simultaneously decode multiple MPEG streams, Fukushima teaches the use of multiple MPEG decoders to simultaneously decode multiple MPEG streams. Thus combining Sun and Fukushima would not teach, suggest or motivate “decoding the coded images using the single MPEG decoder based on the prioritizing,” as recited.

Claim 17 and 27 depend from claim 10. Accordingly, Applicant respectfully submits that claims 10, 17 and 27 are not rendered obvious by Sun, alone or in combination with Fukushima.

The Examiner rejected claims 1-9, 11-16 and 18-26 under 35 U.S.C. § 103(a) as being unpatentable over Sun (US 5,455,629) and Oku (US 5,880,786) in further view of Fukushima (US 6,477,204). Applicant respectfully traverses the Examiner's rejections. Independent claim 1 recites: "an MPEG decoder structured to decode several coded images from at least a first and a second MPEG stream for displaying simultaneously one image of the first MPEG stream and one image of the second MPEG stream, the coded images belonging to a first type or to a second type, the images of the first type being frame interlaced images comprising two fields, the decoding of which is completed in two periods, one of the periods being equal to the time duration of one field display, and the images of the second type being interlaced half-images or progressive images, the decoding of which is completed in one of the periods; and a ... decoder control circuit being configured to receive an order to decode a plurality of images at each of the periods and including a priority assignment circuit structured to, at each period, grant among the images to be decoded a decoding priority such that the highest decoding priority is granted to images of the first type that have received their decoding order for more than one of the periods." Similarly, independent claim 8 recites: "receiving first and second image sequences of coded images from more than one MPEG stream, each coded image having a frame interlaced image type or an interlaced half-image image type; receiving a stream of decoding commands in a series of synchronizing periods, each decoding command corresponding to a respective one of the coded images; adding each decoding command to a priority list; prioritizing the decoding commands by assigning to each decoding command a priority level based on the image type of the coded image corresponding to the decoding command and the period in which the decoding command was received."

As noted above, Sun, alone or in combination with Fukushima, does not teach, suggest or motivate "an MPEG decoder ... structured to decode several coded images from at least two MPEG streams simultaneously in a plurality of periods," as recited in claim 1. The Examiner does not contend that this is taught, suggested or motivated by Oku. Further,

Fukushima teaches away from using a priority scheme to simultaneously decode more than one MPEG stream. The Examiner does not contend that this is taught, suggested or motivated by Oku.

The Examiner identifies intraframe coding frames (I frames) and two types of interframe predictive coding frames (P and B frames) as the claimed image types and then points to column 8, lines 19-26, to assert that priority is assigned on the basis of an image type. “Type”, however, at column 8, lines 19-26 of Sun, refers to an expected codeword type, not to an image type, and the cited section discusses passing either the HP or the LP signal of an image sequence. Thus, Sun is not an appropriate primary reference because it does not teach or suggest a “grant among the images to be decoded a decoding priority such that the highest decoding priority is granted to images of the first type that have received their decoding order for more than one of the periods” as recited in claim 1 or “prioritizing the decoding commands by assigning to each decoding command a priority level based on the image type of the coded image corresponding to the decoding command and the period in which the decoding command was received,” as recited in claim 8.

In addition, the Examiner concedes that Sun does not teach the use of periods in a prioritizing scheme for decoding. The Examiner contends this is taught by Oku, citing to column 3, lines 25-48, and to Figure 11. As Applicant previously argued, the cited portion of the specification of Oku does not discuss synchronization periods. The Examiner failed to address this in the present Office Action, other than to assert without support or argument that vertical and horizontal synchronization signals correspond to priority synchronization periods. Moreover, Oku does not teach, suggest or motivate assigning decoding priority levels to image sequences during a synchronization period, let alone priority assignments based on an image type. Further, the Examiner does not explain how combining the vertical and horizontal periods of Oku with Sun and Fukushima would achieve the claimed invention. It would not. The vertical and horizontal signals of Oku are used to determine when the memory may be accessed for decoding and when it may be accessed for displaying. *See* Oku, col. 14, lines 8-15. These signals are not used to prioritize decoding between images based on an image type or based on when a decoding order was received.

Claims 2, 3 and 5 depend from claim 1 and claim 9 depends from claim 8. Accordingly, Applicant respectfully submits that claims 1-3, 5, 8 and 9 are not rendered obvious by Sun in view of Oku and Fukushima. Claims 11-14, 16 and new claim 28 depend from claim 10. As discussed above, Sun, alone or in combination with Fukushima, does not teach or suggest “prioritizing the received coded images based on whether the coded image is a frame-interlaced coded image and on when the corresponding decoding command was received; decoding the coded images using the single MPEG decoder based on the prioritizing,” as recited in claim 10. The Examiner does not contend that this is taught or suggested by Oku. Accordingly, Applicant respectfully submits that claims 11-14 and 16, as well as new claim 28, are not rendered obvious by Sun in view of Oku and Fukushima.

Independent claim 18 recites: “an MPEG decoder configured to decode a plurality of MPEG image sequences from more than one MPEG stream in parallel; and a controller coupled to the MPEG decoder and configured to control the MPEG decoder such that: a received frame-interlaced image sequence is decodable during two periods following an associated decoding order; and a received non-frame-interlaced image sequence is decodable during a first period following an associated decoding order.” Claims 19-24 depend from claim 18. As noted above, Sun, alone or in combination with Fukushima and Oku, does not teach, suggest or motivate an MPEG decoder configured to decode a plurality of MPEG image sequences in parallel, let alone an MPEG decoder configured to decode images in periods following the decoder order based on whether the image is from a frame-interlaced image sequence. Accordingly, Applicant submits that claims 18-24 are not anticipated or rendered obvious by Sun alone or in combination with Oku and Fukushima.

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The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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